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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/022,791

12/13/2001

Qicai Shi

CM03396J

7168

24273

7590

08/09/2005

MOTOROLA, INC  
INTELLECTUAL PROPERTY SECTION  
LAW DEPT  
8000 WEST SUNRISE BLVD  
FT LAUDERDAL, FL 33322

EXAMINER

FLANAGAN, KRISTA M

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/022,791

Applicant(s)

SHI ET AL.

Examiner

Krista M. Flanagan

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-26 is/are allowed.
- 6) ☒ Claim(s) 1,2,7,10 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 3-6,8,11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

1. In view of the amendment filed on 19 May 2005, the Examiner withdraws all objections to the drawings from the previous Office Action.

### ***Specification***

2. In view of the amendment filed on 19 May 2005, the Examiner withdraws all objections to the specification from the previous Office Action.

### ***Claim Objections***

3. In view of the amendment filed on 19 May 2005, the Examiner withdraws all claim objections from the previous Office Action.

### ***Allowable Subject Matter***

4. The indicated allowability of canceled claim 9 and claims 10 and 15 are withdrawn in view of the reference to Hctor et al., US Patent Application No. 2003/0069025 A1. Rejections based on the reference follow.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 7, 10 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hctor et al., US Patent Application No. 2003/0069025 A1.

7. Regarding claim 1, Hctor discloses a method for receiving a CDMA signal having in-phase and quadrature component waveforms (See page 4, paragraph 0038) each modulated by a pseudo-noise code of length M chips so that M chips (See page 4, paragraph 0037), with each chip of the M chips having one or more data samples that are each comprised of one or more quantized bits, represent one information bit, said method comprising: converting said in-phase component waveform into a first sequence of data samples (See page 4, paragraph 0038); converting said quadrature component waveform into a second sequence of data samples (See page 4, paragraph 0038); selecting one or more data samples of each of the M chips and one or more quantized bits from each selected data sample from the first or second sequence of data samples to obtain a data sequence (See page 4, paragraph 0037) ; processing said data sequence to determine if a signal is present in the DS-CDMA signal (See page 4, paragraph 0041); and if a signal is present: collecting a predetermined number of samples from said first and second sequences of data samples; and decoding a predetermined number of samples from said first and second sequences of data samples to recover information from the DS-CDMA signal (See figure 5, block 134 and page 5, paragraph 0049). Hctor fails to disclose a method for receiving a CDMA signal wherein each sample of said first and second sequence of data samples has a resolution of less than or equal to 10-bits. However, it is appreciated that one of ordinary skill in the art would recognize that there are many ADC available in various resolutions including 10 bits or less. One of ordinary skill in the art would be motivated to choose an ADC with a resolution of 10 bits or less to met requirement for convenience, cost, power dissipation and ease of use.

8. Regarding claim 2, which inherits all of the limitations of claim 1, Hctor discloses a method for receiving wherein said processing said data sequence to determine if a signal is present comprises: coherently averaging said data sequence over one or more information bits to obtain an averaged data sequence of length  $M$  chips (See page 5, paragraph 0048); correlating said averaged data sequence with a pseudo-noise code sequence of length  $M$  to obtain a correlation output (See page 5, paragraph 0049); and comparing said correlation output with a predetermined threshold level to determine if a signal is present in the DS-CDMA signal (See page 5, paragraph 0049).
9. Regarding claim 7, which inherits all of the limitations of claim 1, Hctor discloses a method for receiving wherein said converting said in-phase component waveform into a first sequence of data samples and said converting said quadrature component waveform into a second sequence of data samples are performed by first and second analog-to-digital converters (See figure 5, block 133).
10. Regarding claim 10, which inherits all of the limitations of claim 1, Hctor discloses a method for receiving wherein said in-phase and quadrature waveforms are sampled at a rate of  $N_s N_c$ , wherein  $N_c$  is the chip rate in the DS-CDMA signal and  $N_s$  is the number of samples per chip (See page 4, paragraph 0044).
11. Regarding claim 13, which inherits all of the limitations of claim 1, Hctor discloses a method for receiving wherein said processing said data sequence to determine if a signal is present in the DS-CDMA signal and said decoding a predetermined number of samples from said first and second sequences of data samples to recover information from the DS-CDMA signal is performed on a digital signal processor (See figure 5, block 134 and page 5, paragraph 0049).

12. Regarding claim 14, which inherits all of the limitations of claim 1, Hctor discloses a method for receiving wherein said decoding comprises: correlating said predetermined number of samples from said first and second sequences of data samples with a pseudo-noise sequence to obtain a plurality of correlation values; and determining the information in the DS-CDMA signal from said plurality of correlation values (See page 5, paragraph 0049).

13. Regarding claim 15, Hctor discloses a method for receiving wherein said selecting includes sub-sampling said first or second sequence data samples to a rate of one sample per chip (See page 4, paragraph 0038).

*Allowable Subject Matter*

14. Claims 16-26 are allowed.

15. The following is an examiner's statement of reasons for allowance: Prior art does not disclose a method or a device as claimed where there is a data sequence retrieved from said first memory that is then processed to determine if a signal is present in the DS-CDMA signal; and if a signal is present: causing a predetermined number of samples of the DS-CDMA signal to be stored in a second memory; retrieving said predetermined number of samples of the sampled DS-CDMA signal from said second memory; and decoding said predetermined number of samples of the sampled DS-CDMA signal to recover information from the sampled DS-CDMA signal.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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16. Claims 3-6, 8, 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krista M. Flanagan whose telephone number is (571) 272-2203. The examiner can normally be reached on Monday - Friday, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Flanagan  
20050801

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER